Trail Management 101

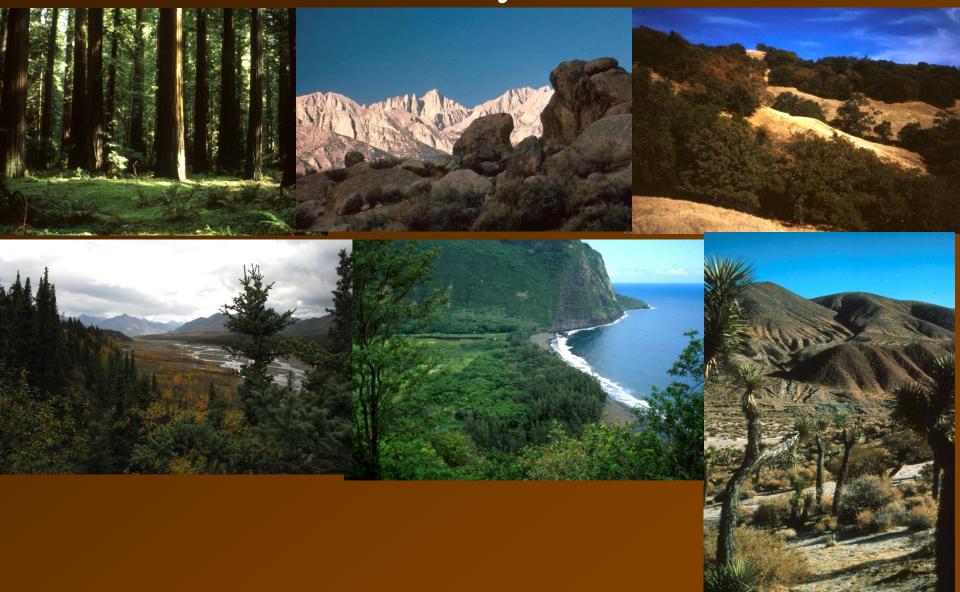
Course Objectives

- Learn the process for :
- Classifying and prioritizing trails
- Developing standards and specifications for trail work
- Inventorying and assessing trails
- Quantifying trail maintenance and rehabilitation workload and cost
- Prioritizing and scheduling trail projects
- Developing tool, equipment and material inventories

Course Objectives

- Securing and developing labor sources
- Evaluating and monitoring trail systems
- Continually adapting and improving your trail program

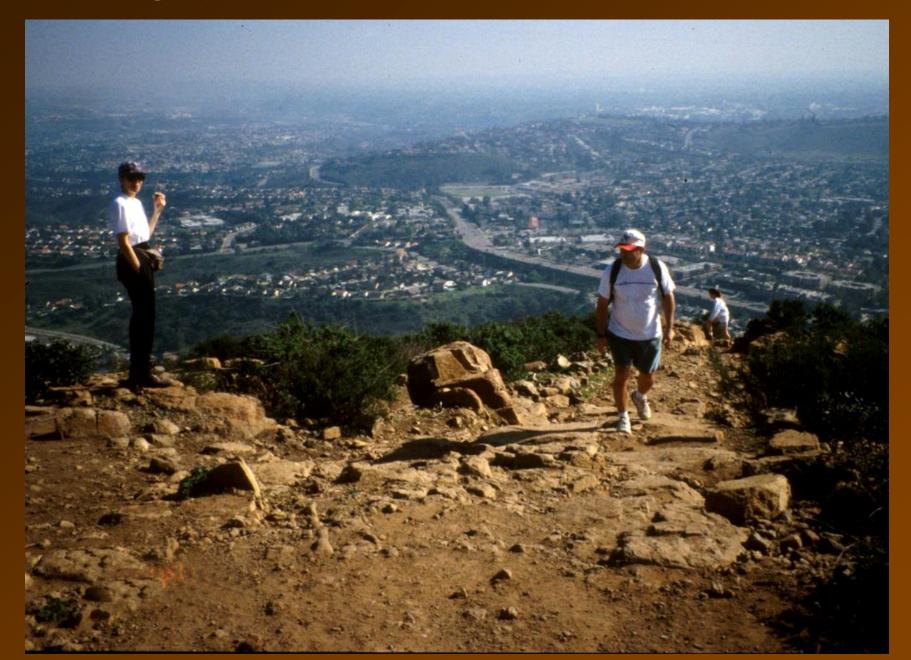
Trails traverse a wide variety of landforms and ecosystems



Trails are designed and constructed to meet the needs of different user groups



Urban hikers



Backpackers



Equestrians



Mountain bikers



Multiuse



Off Highway Vehicles



Trail systems also include a variety of support facilities

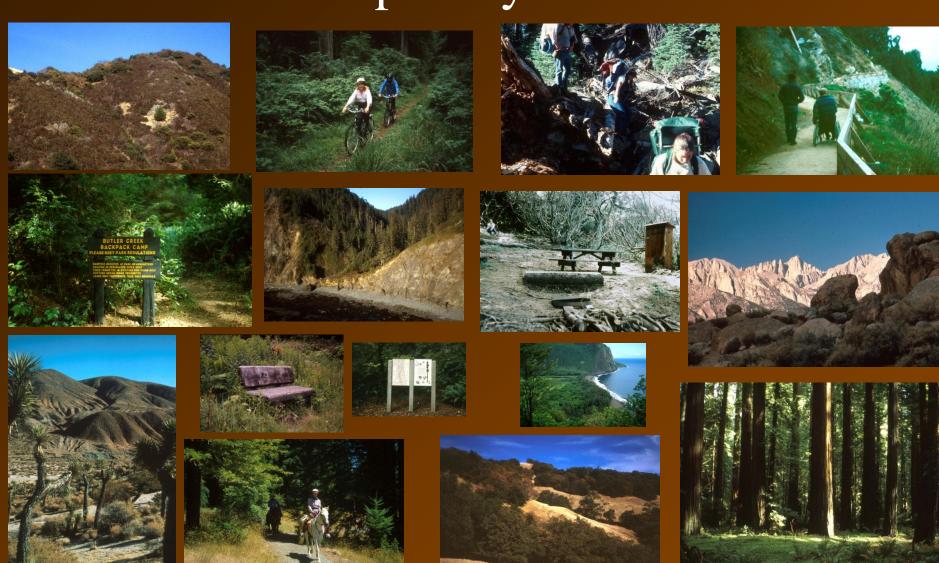








How can we organize and manage such diverse and complex systems?



The organization of a trail system begins with classification of each trail

A trail matrix is used to evaluate each trail, identify its classification and establish its comparative rank or importance within the trail system

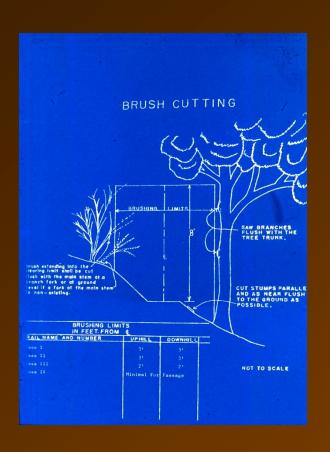
TRAIL NAME:										
TRAIL CLASSIFICATION MATRIX										
CRITERIA	Point Values	Rating								
1. Accessible	25									
2. Interpretive	15									
Within Visitor Use Facility	15									
4. Equestrian and Bike (Multi Use)	15									
Adjacent to Visitor Use Facility										
0-1/4 mile	12									
1/4 - 1 mile	8									
1-2 mile	4									
2 or more miles	0									
Connection of Visitor Use Facilities	5									
7. Parking Access	5									
Destination Oriented										
0 - 1 mile	3									
1 -3 miles	2									
3 + miles	1									
Connection with Other Agency Trail	+3 - +5									
10. Special Use or Access	1									
11. Dead End Trail	0 or -3									
12. Loop or Connecting Trail	+1 - +3									
13. Fragile Environment										
Protected by lessening use	-13									
Protected by upgrading	+1 - +3									
14. Safety Factors										
Encourage less use by not Providing Improvements	-15									
b. Provide and maintain improvements	+0 - +5									
15. Staff Determined Use Patterns										
Little or no use	-13									
Higher use	+1 - +3									
	TOTALS									
CLASSIFICATION: II I = 30+ II = 19 - 29 III = 10 - 18										
IV = 0 - 9										

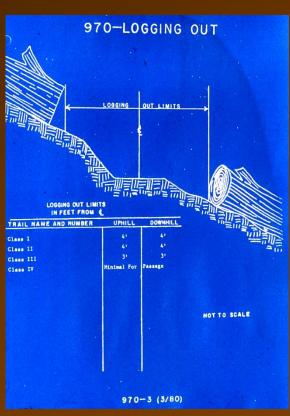
TRAIL NAME:	

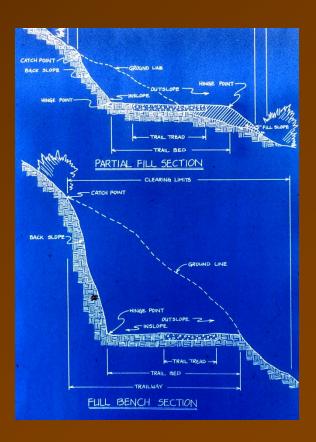
TRAIL CLASSIFICATION MATRIX

CDITEDIA	Daint Value	Detino
CRITERIA	Point Values	Rating
1. Accessible	25	
2. Interpretive	15	
Within Visitor Use Facility	15	
Equestrian and Bike (Multi Use)	15	
Adjacent to Visitor Use Facility		
0-1/4 mile	12	
1/4 - 1 mile	8	
1-2 mile	4	
2 or more miles	0	
Connection of Visitor Use Facilities	5	
7. Parking Access	5	
Destination Oriented		
0 - 1 mile	3	
1 -3 miles	2	
3 + miles	1	
Connection with Other Agency Trail	+3 - +5	
10. Special Use or Access	1	
11. Dead End Trail	0 or -3	
12. Loop or Connecting Trail	+1 - +3	
13. Fragile Environment		
Protected by lessening use	-13	
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CLASSIFICATION: II		
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I = 30+ II = 19 - 29		
II = 19 - 29 III = 10 - 18		
III = 10 - 18 IV = 0 - 9		
17 - 0 - 9		

A set of design and construction standards is developed for each trail class.







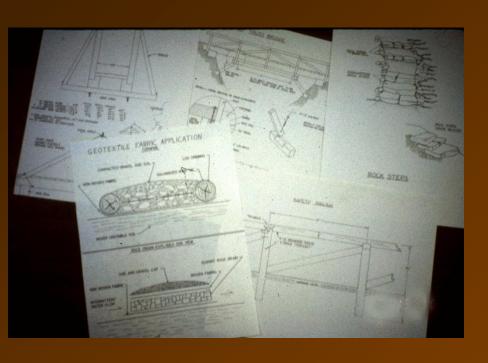
Specific design standards are also developed for the various user group trails







Once design and construction standards are developed the trail system can be inventoried and assessed using those standards





This can be accomplished by developing trail logs



Trail logs identify and quantify all trail features as well as trail deficiencies and their corrective prescriptions





When a trail is being assessed you must also determine if it is:



Not sustainable but maintainable

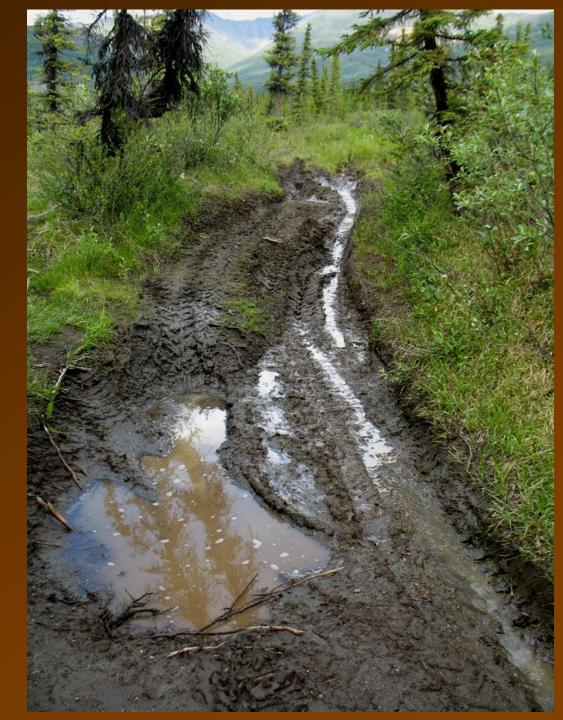
BEFORE (note yellow star for reference point)





NOW (note yellow star in same place for reference point)

Not sustainable or maintainable



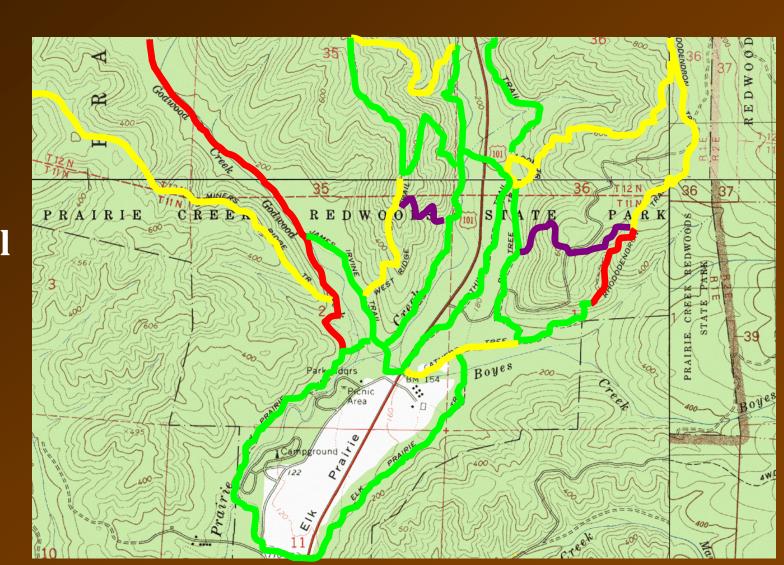
You must also determine the cause of the trails deficiencies

- Layout & Design
- Construction
- Maintenance

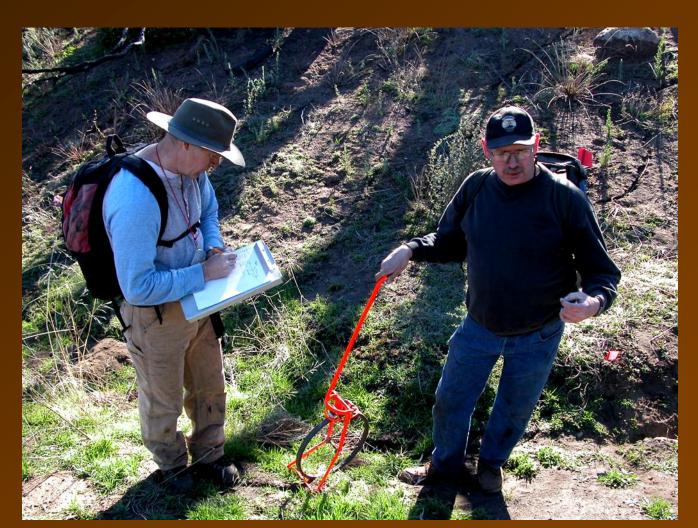


Once each trail is assessed it can be determined if the trail requires:

- Maint.
- · Recon.
- Reroute
- Removal



Prescriptions for correcting theses deficiencies can be identified on the trail log or developed at a later date



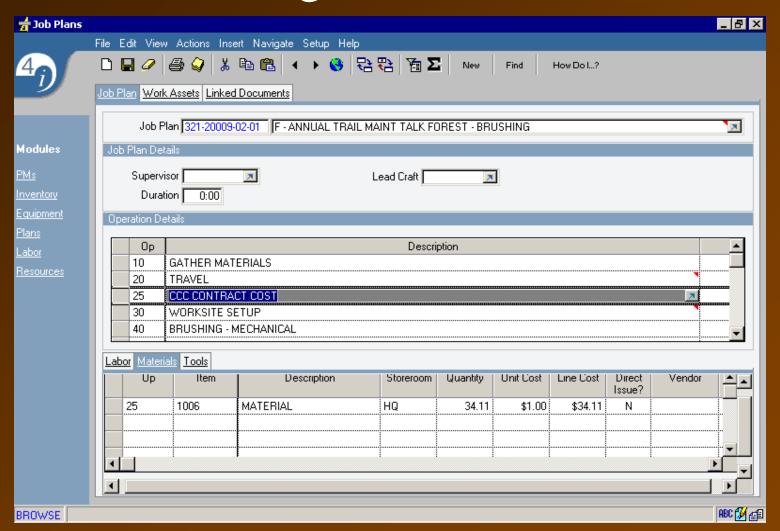
The data collected from these inventories can then be sorted and used in electronic spreadsheets to calculate trail maintenance

workload and cost

SCHEDULE FOR MAINTENANCE OR					HOUSEKEEPING										
			FEET	MI	۱۸	/IDT	ъ			_					
NAME OF FACILITY		Overlook	363	0.1	,,	3		FA	\CILI	TY NO).	123-F	-2-03-	1-002	
		DAILY TO ANNUAL CYCLI	F					2 T	0.5	YEAR	R CY	OLE		PERSON	AL SERVICES
		PERSON HOURS		RLY TOTAL	2	3	4	5		XT.3 F			DTAL	Littoore	PERSON
JOB DESCRIPTION		DAILY TO ANNUAL	PH	MATL		YR	YR	YR	SC	HEDUL	.ED	PH	MATL	Class	HOURS
Safety Inspection 123-20001-01-01		Feet Divided By 2 mile per Hour Hiking time or 10560 feet	0.03											PMS	0.03
5002															
Yearly Brushing 123-20009-02-01	1	Feet Divided by 500 feet per person ho year cycle between brushing		Contract \$10.62		CC	Î	Con	tract	\$13.00	per h	our			
5005		Hiking and Travel Time	0.09						Pla	anning a	and Su	.pervisor	Hours	PMW II	N 12
Slough and Berm Maintenance 123-20009-03-01		Feet Divided by 75 feet per person hou year cycle Hiking and Travel Time	0.97 0.12	Contract \$14.16		cc	Ì	Con		\$13.00			110010		0.12
5006									Pla	anning a	and Su	pervisor	Hours	PMW II	0.16
Down Tree Removal	_	Number of Down Trees from trail log divided by trail Age Trail Age													
5008	0	Yearly Average of Down Trees times average of 1 hour per tree	0.00	Contract \$0.00		cc		Con		\$13.00	ľ	1			
Miscelleanous Logging		Hiking and Travel Time	0.00		<u> </u>				Pl	anning a	and Su	pervisor	Hours	PMW II	0.00
Out and Brushing Supplies	\$1.58	Misc clearing and brushing supplies and equipment. 1 brush blade per mile plus saw chain and fuel.		\$1.58											
Trail Reroute and Reconstruction 123-20015-01-03	4	1% of trail tread on average feet yearly divided by 7 feet per person hour equals hours annually Hiking and Travel Time	0.52 0.06	Contract \$7.58		cc		Con	tract	\$13.00	per h	our			
5020									Pla	l anning a	l and Su	 Jpervisor	l Hours	PWW II	0.09
ANNUAL TOTAL MATERIAL COST ALL PAGES: \$117.19						_	_	_				HOUR			0.66
TOTAL EQUIPMENT COSTS- FROM PAGE 4 \$0						CHE		E 9Y: .	meb			-	_	DATE:	2/20/02

	Trail 473 Data Sheet				Trail Data Entry Area		TAB 473 #1	TAB 473 #2	TAB 473 #3	TAB 473 #4
	Park or Sector:	DENDOWIA	VE STATE DE	CDE		ared By:	meb	meh	meh	17.15 110 111
	Park or Sector Budget	DENOON D	INC STATE IN	CILL	ATIONANCE TTO	Date:	2/20/02	2/20/02	2/20/02	
	r ark or Sector Budget					Date.	ZIZOIOZ	Z/Z0/0Z	ZIZOIOZ	
	Materials and Contract:	\$2,509.91			Tr	ail Name:	Overlook	Pioneer	Pratt Mill	
	Equipment Rental:	\$0.00				ark Unit:	123	123	123	
	Equipment Nental.	\$0.00			Classification		1	1	1	
	Total Trail Footage Personal Hours PMS	11816					123-F-2-03-1-002	123-F-2-03-1-001 4245	123-F-2-04-1-001	0
=	Personal Hours PMS Personal Hours PMW II	1.12			Trail Width in Feet (d	ength Ft:	363	4245	7208	0
	Personal Hours Pivivv II	20.82			Trail Age Years(never less		3	20	3	3
3	Parkwide Trails Facility no:	400 F 0.00 4	000		Material and Contra			\$935.85	\$1.456.86	\$0.00
	Tarkwide Halls Facility No.	1234 -2-03-1-	003		Equipment Ren			\$0	\$0	\$0.00
					Personal Ho			0.40	0.68	0.00
Ī					Personal Hour			8.08	12.12	0.00
					T Groundi Trous		0.02	0.00	TETTE .	0.00
	Material and Labor Cost She	et			Equipment Item #1 page 1					
	ltem	Unit	Cost		Equipment Item Needing to					
	CCC Contract Labor Cost	hour	\$13.00	w	hen Needed (fall, winter, sprin					
	Brush Blades	each	\$23.00		Cost for Equipn	ent Rental	\$0.00	\$0.00	\$0.00	\$0.00
	Saw Chain	foot	\$0.80		Equipment Item #2 page 1					
	Gravel	cubic yard	\$25.00		Equipment Item Needing to					
	Wood Step Material	board foot	\$1.80	W	hen Needed (fall, winter, sprin					
	Wood Retaining Wall Material	board foot	\$2.00		Cost for Equipm		\$0.00	\$0.00	\$0.00	\$0.00
	5/8" Rebar	lineal foot	\$0.25		Equipment Item #1 page 2					
	Hand Railing Material	board foot	\$1.80		Equipment Item Needing to					
	Split Rails	each	\$22.00	W	hen Needed (fall, winter, spring		***	\$0.00	\$0.00	\$0.00
	Puncheon Replacement Costs Bridge Replacement Costs	lineal foot	\$50.00 \$435.00		Cost for Equipm Equipment Item #2 page 2		\$0.00	\$0.00	\$0.00	\$0.00
	Laborer	hour	\$15.20		Equipment Item Needing to					
	Park Maintenance Worker I	hour	\$16.58	w	hen Needed (fall, winter, spring					
Ī	Park Maintenance Worker II	hour	\$19.66	-"	Cost for Equipm		\$0.00	\$0.00	\$0.00	\$0.00
					Trail Log Inventory	Unit of	-			-
	Park Maintenance Supervisor	hour	\$20.26		Totals	Measure				
	Type of Contractor, ie CCC				Brushing Cycle					
	CDF, Private, CYA ect		CCC			years	1	1	1	1
	Geotextile Wall Fabric		\$0.08		Slough and Berm Maintenance Cycle		-	-	-	-
	Geolexille Wall Fabric	square foot	\$0.08		maintenance cycle	years	3	J	5	5
	Cellular Wall Fabric	cubic foot	\$2.75		Down Trees	each		13	20	
					Gravel Surfacing ie Turnpike					
П	Drain Lens Quarry Rock 3"-8"	cubic foot	\$1.00		and Causeway				525	
Ш	CMP Culvert 18"	lineal foot	\$7.50							
Ш	Seasonal Pipe Bridge	each	\$850.00		Standard Wood Steps	each				
	Trail Bench	each	\$750.00		Interlocking - Single					
Г	4WD Trail Tractor	hour	\$15.00		Interlocking - Double					
	Motorized Wheelbarrow	hour	\$2.50		Waterbar - wood					
	450 Trail Dozer	hour	\$19.00		Cable Steps	each				
	Tilt Trailer	hour	\$5.00		Wood Retaining Wall	smilare feet		314	459	
Ш		- III	\$0.00		(adbutments, tumpike wall, full & partial	a quare reet				
П_					crib step retainers)					
Η.					Standard Wood Rails		50			
J,					Standard Wood Rails Split Rail Fences		50			
					Mortar Rock Safety Walls					
					mortar ROCK Safety Walls	cubic reet				
					Puncheons	each				
		_			Puncheon Maintenance	imeal reet				

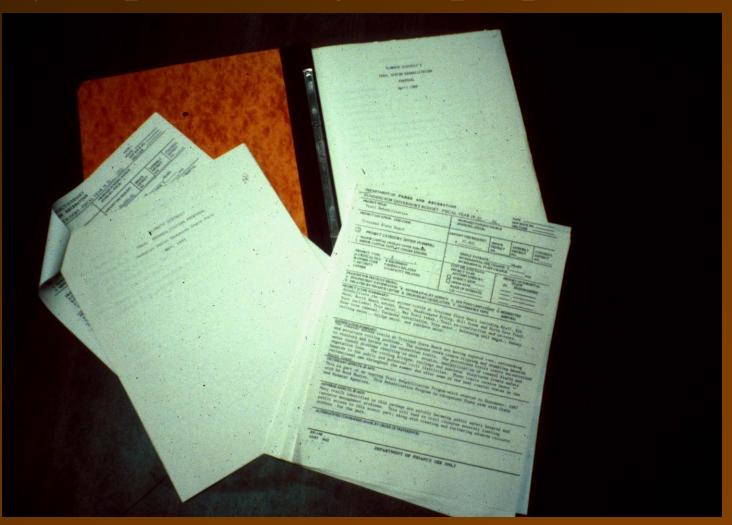
This data can be used in Maximo or other data base programs to justify annual trail maintenance budgets



These inventories can also be used to quantify trail rehabilitation cost

						Т	RAIL:	James Irvine	
					PER UNIT			LABOR	MATERIAL
CONSTRUCTION ACTIVITY	TOTALS	UNIT			COST	L		COST	COST
Helicopter Rental	0		hrs	@	\$8,000.00	=			\$0.00
Mule Packing Contract	0		day	@	\$125.00	=			\$0.00
Spike Camps									
If Spike Camp Put "1" in Box If No Spike Camp Put "2" in Box	1								
Spike Camp Move-in Move-out Cost	2.00		ea	@	\$750.00	=			\$1,500.00
Spike Camp Overhead Costs	17.41		weeks	@	\$750.00	=			\$13,056.30
Cook Contract	4.35		month	@	\$4,800.00	=			\$20,890.08
Vehicle Cost (Crew Van/CCV)	4		month	@	\$600.00	=			\$2,611.26
Trail Crew Management Information								tax on materials	\$4,654.23
Crew Size (number of workers)	10								
								Labor	Materials
Work Day Hours (8 or 10 hour days)	8							\$83,888.00	\$71,461.84
					Hikin	g 1	Time	\$5,243.00	
Average Daily Hiking Time on Project					Total	La	bor	\$89,131.00	
Display in increments of 15 minutes at .25	0.50				Supervision	n (Cost		\$13,369.65
hours (ex .25, .50, .75, 1.00, 1.25, 1.50)		То	ol & Eq	uip	ment Replac	en	nent		\$8,698.12
				Щ			4007		A00 075 50
	Adminis	strative	Overhe	ead	Percentage		12%		\$20,875.50
						L			
			TOTAL PROJECT COST				\$	203,536.11	

This data can be used to secure trail rehabilitation funds through capital outlay request and grant proposals



Trail deficiencies identified through inspections and staff input are then prioritized. Prioritizing trail projects should be an objective process.

			100	1 20 5
ROA	DS, TRAILS AND I	RESOURCE ECT REQUE		ECTION
i tiete 2 c	ubmitted Bu	3 50	nervisor's Initials:	4. Date:
5. Work Category: _	Roads Heav	y Equipment	Trails Res	ource Maintenance
6. Nature of Work:	Visitor Convenier	Resource P	rotection Presen	rvation of Investment ng source for new
7. Primary Project Su	pervisor if other than	RTR		
7. Primary Project Su	pervisor, it other than	11.1.1.		
8. Project Description	1:			
The state of the s				
				1
9. Equipment Requir	ements:	y gra		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				- Park
		-		20,000
10. Tool Requiremen	ts:			
				Protection Contraction
11. Material Require	manter			
11. Material Require	ments.			
12. Crew Requirement	nts:			
	100			
13. Projected Project	Start Date:	100		
14. Estimated Projec	Duration:	-	4	
	The state of the s	1.		



Health and safety







Resource protection





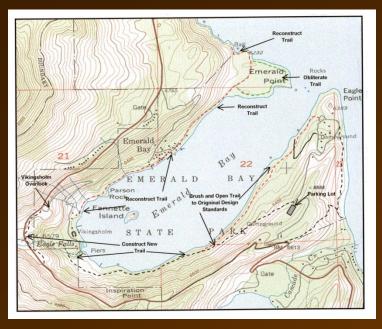
Preservation of investment



Visitor convenience



New trail development









For each of these categories points are assigned based on the severity of the

pro	hĺ	lem.
Pro	נט	

		Trail Pro	oject Selec	tion Matr	ix			
		ing Deficie						
	(select	all that apply	and rank it on	ale shown)				
Trail Project		Protection	Preservation of Investment 1-7	Visitor Conveinenc e1-5	New Trail Construction 1-3	Total Matrix Points	Trail Class	Trail Class Points
West Ridge	5	6		4		15	3	19
Ten Taypo	8	10	2			20	3	18
Superintendent					2	2	2	22
South Fork	8	7				15	3	14
Rhododendron	5	6	3	2		16	3	18
Revelation			7			7	1	42
Ossagon	5	9				14	2	20
Little Creek		8		2		10	4	5
James Irvine	10	5	5			20	1	32
Foothill	10	6	4			20	2	25
Elk Prairie	8	7	5			20	1	38
Clintonia			6	2		8	3	15
Cathedral Trees			7	4		11	2	21
Brown Creek	2	6	2			10	2	23

		Trail Pr	oject Selec	tion Matri	ix (Sorted)		
	Qualify	ing Deficie	ncv					
	_	_	and rank it on	the severity so	ale shown)			
Trail Project	Visitor	Resource	Preservation of Investment 1-7	Visitor Conveinenc e1-5	New Trail Construction 1-3	Total Matrix Points	Trail Class	Trail Class Points
Elk Prairie	8	7	5			20	1	38
James Irvine	10	5	5			20	1	32
Foothill	10	6	4			20	2	25
Ten Taypo	8	10	2			20	3	18
Rhododendron	5	6	3	2		16	3	18
West Ridge	5	6		4		15	3	19
South Fork	8	7				15	3	14
Ossagon	5	9				14	2	20
Cathedral Trees			7	4		11	2	21
Brown Creek	2	6	2			10	2	23
Little Creek		8		2		10	4	5
Clintonia			6	2		8	3	15
Revelation			7			7	1	42
Superintendent					2	2	2	22

Once the trail projects are prioritized they can be scheduled

NORTH COAST R	REDWOO	DS	S D	IS'	TR	IC	Т																																
ROADS TRAILS & RES	SOURCE M	AIN	ITE	NAI	NCE	E S	EC	TIC	NC																													\pm	
								_		+			4	_	_			4		1	4						4		_	_	_	_		1		_	_	+	_
TRAIL PROJECTS NORTH	2006/07		MO	WT	4															Ш							_					_			Ш			\perp	_
		ост	ОВЕ				мве				МВЕ				UAR				ARY		4AR			AP					ΑY				JUNE			JUL.	Y		
		28	5	12 1	9 8	2	9 1	16 2	3 30	7	14	21		4 1	1 18		1	8 1	: :	1	8 1	5 22	29	5	12	19		3 1	10	17	24	31	7 14	21		5 1	2 13	9 1	ŧ
PROJECT	<i>EADPERSO</i>	2	9	18 2	3 8	6	13	2	7 4	1 11	18		1	8 1	: 1		5 1	12 1	: :	5	2 1:	9 26	2	9	16	23		7 1	14				2 18			9 1	6 1		
irtine trail reroute	Klinger																										Т		Т	П	П	П	Т	П	П		Т	Т	
prairie creek trail puncheons	Klinger				Т			Т	Т	Т			Т	Т	Т			Т	Т	П	Т	Т					Т	Т	Т	П	П	П	Т	П	П		Т	Т	
crea trail bridge replacement	ТВА				Т		П	Т	Т	Т				Т	Т			Т	Т	П	Т	Т					Т	Т	Т	П	П	П	Т	П	П		Т	Т	
old growth log outs sector wide	Yaughn				Т		П	Т	Т	Т								Т	Т	П	Т	Т					Т	Т	Т	П	П	П	Т	П	П		Т	Т	
del norte ouncheon	ТВА							\perp										\Box			\perp								\Box				Ι				Ι	T	
trestle loop bridge	тва				Γ			$oldsymbol{oldsymbol{oldsymbol{oldsymbol{\Box}}}$	Ι					Ι				\Box			Ι							\perp	$oldsymbol{\mathbb{I}}$				Ι			\Box	T	T	
college core steps	ТВА				$oxed{\Box}$			$oldsymbol{oldsymbol{oldsymbol{oldsymbol{\Box}}}$	Ι					Ι														\perp	$oldsymbol{\mathbb{I}}$				Ι			\Box	T	T	
wedding rock trail	ТВА							\perp																			Ι		Ι								\perp	I	
acquisition road brushing	ТВА																			Ш																			
stone lagoon brushing	ТВА																																						
seasonal brushinh north	ТВА																			Ш																		\perp	
seasonal brushing south	ТВА							\perp		\perp			\perp	\perp				\perp		Ш	\perp													\perp			\perp	\perp	
install seasonal pipe bridges	ТВА			\perp	\perp	Ш		\perp	\perp	\perp			\perp	\perp	\perp	Ш		\perp	\perp	Ц	\perp	\perp					\perp	\perp	\perp	\perp	\perp			\perp	Ш		\perp	\perp	
acquisition road brushing	ТВА			\perp	\perp	Ш		\perp	\perp	\perp		Ц	\perp	\perp	\perp	Ш		\perp	\perp	Ц	\perp	\perp					\perp	\perp	\perp	\perp	\perp	\perp		ш	Ш		\perp	\perp	
NO CREV SCHEDULED	ТВА		\perp	\perp	\perp	Ш	Щ	\perp	\perp	\perp	\perp	Ц	\perp	\perp	\perp	Ш	\perp	\perp	\perp	Щ	\perp	\perp	$oxed{oxed}$				\perp	\perp	\perp	_	\dashv	\dashv	\perp	╙	Ш	\perp	\perp	\perp	_
Elk prairie burn prep	ТВА		\perp	\perp	\perp	Ш	Щ	\perp	\perp	\perp	\perp	Ц	\perp	\perp	\perp	Ш	\perp	\perp	\perp	Щ	\perp	\perp	$oxed{oxed}$				\perp	\perp	\perp	_	\dashv	_	\perp	╙	Ш	\perp	\perp	\perp	_
tread fabrication	ТВА	\Box	\perp	\perp	\perp	Ш	Щ	\perp	\perp	\perp	\perp	Ц	\perp	\perp	\perp	Ш	\perp	\perp	\perp	Ц	\perp	\perp	$oxed{oxed}$			Ш	\perp	\perp	\perp	_	\dashv	_	\perp	╙	Ш	\perp	\perp	\perp	_
acquisition road brushing	ТВА	\Box	\perp	\perp	\perp	Ш	Щ	\perp	\perp	\perp	Ш	Ц	4	\perp	\perp	Ш	\perp	\perp	\perp	Щ	\perp	\perp	$oxed{oxed}$			Щ	4	\perp	4	_	_	_	\perp	┸	Ш	\perp	\perp	\perp	_
miners ridge trio maintenance	ТВА			\perp	\perp	Ш	Ц	\perp	\perp	\perp	\perp	Ц	\perp	\perp	\perp	Ш		\perp	\perp	Ц	\perp	\perp					\perp	\perp	\perp	\perp	\perp	\dashv	\perp	\perp	Ш	\perp	\perp	\perp	_
seasonal bridge removal	ТВА					Ш	Ш					Ш				Ш				Ш						Ц	\perp		\perp			\Box			Ш			\perp	
																				П						Ц	\perp		\perp	[_			Ш			\perp	
irvine trail structures	Klinger							#												Ħ	#					Ц		\perp	\perp	_	_	_	\perp	\perp	Ш	\perp	\perp	\perp	
fema repairs redwood coast sec	Klinger	Ш		\perp	\perp	Ш	Щ	\perp	\perp	\perp		Ш	_	\perp					\perp	Ш	\perp	\perp				Ц	_	\perp	\perp				\perp		Ш		\perp	\perp	_
foothill trail bridge		Ш		\perp	\perp	Ш	Ш	\perp	\perp	\perp	\perp	Ц	\perp	\perp	\perp	Ш		\perp	\perp	Ш	\perp	\perp				Ц	4	\perp	\perp			_	\perp		Ш	\perp	\perp	\perp	
												Ш								Ц						Ц	4	\perp	\perp			_	\perp	_	Ш	\perp	\perp	\perp	
sector wide fema NCIDC	ТВА																							\vdash		Ц	4	\perp	4	_	_	_	4	1	Ш	\perp	4	4	_
sector wide fema rhs	ТВА							88	4	4	\perp	Ш	\dashv	4	\perp	Ш	\perp	4	4	Щ	4	4	\perp			Ц	\dashv	\perp	4	_	_	_	4	1	Ш	\perp	4	4	_
				\perp	4	Ш	Щ	4	4	\perp	\perp	Щ	\dashv	4	\perp	Ш	\perp	4	4	Щ	4	4	\perp			Ц	\dashv	\perp	4	_	_	_	4	4	Ш	\perp	4	4	_
CDF Inmate crew				\perp	4	Ш	Щ	4	4	\perp	\perp	Ш	\dashv	4	\perp	Ш	\perp	4	4	Ш	4	4	\perp			Ц	\dashv	\perp	4	_	_	_	\perp	4	Ш	\perp	4	4	
DPR Trail Crew		,,,,,		\perp	\perp	Ш	Щ	\perp	\perp	\perp	\perp	Щ	\perp	\perp	\perp	Ш		\perp	\perp	Ш	\perp	\perp	\perp			Ц	\perp	\perp	\perp			_	\perp	\perp	Ш	\perp	\perp	4	_
NCIDC Crew				\perp	\perp	Ш	Щ	\perp	\perp	\perp	\perp	Щ	\perp	\perp	\perp	Ш		\perp	\perp	Ш	\perp	\perp	\perp			Ц	\perp	\perp	\perp			_	\perp	\perp	Ш	\perp	\perp	4	_
RHS Crew			***	\perp	\perp	Ш	Щ	\perp	\perp	\perp	\perp	Щ	\perp	\perp	\perp	Ш	\perp	\perp	\perp	Ш	\perp	\perp	\perp			Ц	\perp	\perp	\perp		_	_	\perp	\perp	Ш	\perp	\perp	4	_
								_			-			-												_								1		_	4		

The scheduling of trail projects must account for a number of variables

Visitor use patterns



Weather











Soil moisture conditions

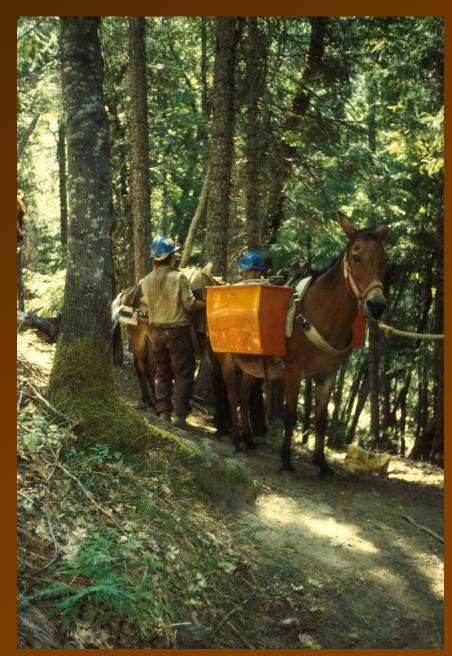




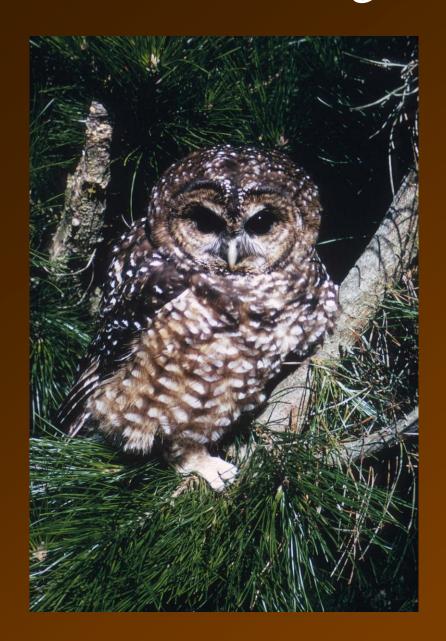
Project logistics and access

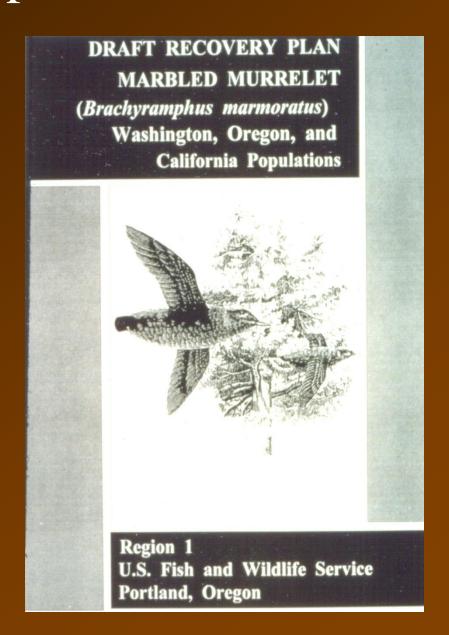






Rare and endangered species restrictions





Labor source availability









Matching project difficulty with the skill level of labor sources









Meeting crew development and training needs

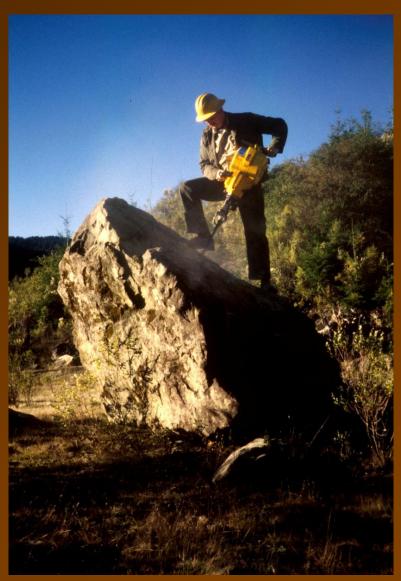




Equipment and specialized tool support must also be scheduled







Materials and tools need to be secured in advance of the project start





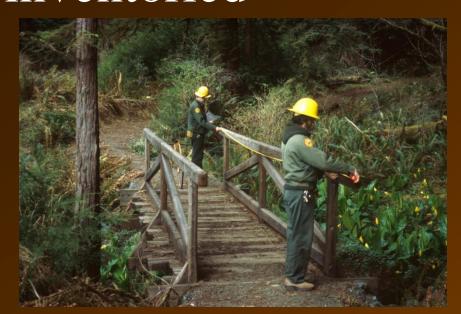


Skilled and experience supervision is needed to provide project organization and efficiency, skill development and quality control





Completed trail projects are inspected and inventoried







Revise trail logs and maintenance budget information

SCHEDUL	E FOR	MAINTENANCE 🔽		OR	НС	ous	EK	ŒEI	PING						
			FEET	MI	V	VIDT	ГН								
NAME OF FACILITY		Overlook	363	0.1		3		F	ACIL	ITY NC) .	<u>123-F</u>	-2-03-	1-002	
								2 -		V/- A [200				
		DAILY TO ANNUAL CYCLE PERSON HOURS	VEA	RLY TOTAL	2	3	4	5		YEAF			DTAL	PERSON	AL SERVICE: PERSON
JOB DESCRIPTION		DAILY TO ANNUAL	PH	MATL		1 -		YR		HEDUL		PH	MATL	Class	HOURS
Safety Inspection	363	Feet Divided By 2 mile per Hour	0.03	1007112	<u> </u>	<u> </u>	1	1					1000112	PMS	0.03
123-20001-01-01		Hiking time or 10560 feet													
5002															
Yearly Brushing		Feet Divided by 500 feet per person hour	0.73	Contract		CC	Ċ	Con	tract	\$13.00	per h	our			
123-20009-02-01	1	year cycle between brushing Hiking and Travel Time	0.09	\$10.62											
5005		Hiking and iravel lime	0.09												
							<u> </u>	L					Hours	PMW II	0.12
Slough and Berm Maintenance		Feet Divided by 75 feet per person hour year cycle	0.97	Contract \$14.16		CC	C 	Con	tract	\$13.00	per h	our 			
123-20009-03-01	_	Hiking and Travel Time	0.12	******											
5006															
5006									Pla	l anning a	l and Su	 upervisor	। 1 Hours	PMW II	0.16
Down Tree Removal		Number of Down Trees from													
123-20009-04-01		trail log divided by trail Age Trail Age													
	0	Yearly Average of Down Trees		Contract		CC	ģ	Con	tract	\$13.00	per h	our			
5008		times average of 1 hour per tree Hiking and Travel Time	0.00	\$0.00					PI:	 anning a	 and Si	Inenisor	 Hours	PMW II	0.00
Miscelleanous Logging		Misc clearing and brushing	0.00									APC: WISO	lilouis	10100 11	0.00
Out and Brushing		supplies and equipment. 1 brush		\$1.58											
Supplies Trail Reroute and		blade per mile plus saw chain and fuel. 1% of trail tread on average													
Reconstruction	4	feet yearly divided by 7 feet per		Contract		CC	Ċ	Con	tract	\$13.00	per h	our			
123-20015-01-03		person hour equals hours annually Hiking and Travel Time	0.52 0.06	\$7.58											
5020		miking and travel time	0.00												
														PMW II	
ANNUAL TOTAL MATERIAL	COST AL	L PAGES:		\$117.19					TO	TAL PE	-KSOI	N HOUR	S ALL	PAGES	0.66
TOTAL EQUIP	MENT COS	STS- FROM PAGE 4		\$0	s	CHE	וטם	.E							
					1 -				meb					DATE:	2/20/02

Establish monitoring sites to evaluate project effectiveness





Evaluating projects is a key component of adaptive management and developing best management practices





The trail management process requires:

- Classifying and prioritizing trails
- Developing trail standards
- Inventorying and assessing trails
- Determining the sustainability and maintainability of each trail
- Quantifying trail maintenance and rehabilitation cost
- Prioritizing and scheduling trail projects
- Securing labor sources, materials and tools
- Providing supervision, training and quality control

The trail management process requires:

- Performing post project inspections and inventories
- Monitoring and evaluating completed projects
- Continually adapting and improving trail maintenance and construction practices